

Thermal Protection Materials and Systems: Been there, want to go to elsewhere

Thermal protection materials and systems (TPS) have been critical to fulfilling humankind's desire to explore space. Composite and ceramic materials have enabled the early missions to orbit, the moon, the space station, Mars with robots, and sample return. Crewed missions to Mars are being considered, and this places even more demands on TPS materials.

This talk will give some history on the materials used for earth and planetary entry and the demands placed upon such materials. TPS needs for future missions, especially to Mars, will be identified and potential solutions discussed.